

Experience has shown that to hand this kind of equipment over to other than specially trained men is certain to end in failure. For the training of these men in methods of water purification the new School of Army Sanitation has been established at Aldershot, where special provision is provided for practical instruction in every method and the working or trial of any new apparatus or chemical technique adapted for army needs. The success of this effort has been already remarkable, demonstrating not only the feasibility of purifying water for soldiers under field conditions, either by means of special filters, by heat exchange sterilisers or by chemical reagents, but also showing the fitness of the men of the Royal Army Medical Corps for this special work. The school is utilised also for instruction of men from every branch of the service in general sanitary duties, and in this twofold way constitutes a centre for the dissemination of practical sanitary knowledge and work to the whole Army.

It is early yet to say what will be the final result of this attempt, but everything points to the conclusion that the incidence of preventable disease in time of war must and will be reduced thereby. It is gratifying, further, to record the sympathetic support which the movement is receiving from a large number of general officers, commanding officers, and others outside the medical corps; but there is much leeway to be made up and much apathy and inertia to be overcome. This will be done only by the support of public opinion and interest, particularly of the scientific public. Possibly this outline of the present position may appeal to them to see that the scheme of work here sketched out has free scope and opportunity to evolve itself; in other words, that medical science is applied logically to the attainment of army efficiency, and that disease prevention is regarded as much a function of the medical corps as disease or wound treatment.

R. H. FIRTH.

#### THE METRIC SYSTEM OF WEIGHTS AND MEASURES IN THE COLONIES.<sup>1</sup>

THE question of the introduction of the metric system of weights and measures into the United Kingdom has been before the public for more than forty years. An important step in this direction was taken in 1897, when the Weights and Measures (Metric System) Act was passed which rendered it lawful to use metric weights and measures in this country for the general purposes of trade. The trading community as a whole has not, however, manifested any eagerness to take advantage of this permissive legislation, and, so far as retail trade is concerned, the use of the metric system appears to be restricted to dispensing chemists and a few vendors of lager beer. It is true that for some years past the system has been allowed to appear in the official syllabus of our public elementary schools, but no stress is laid upon it there, and its chief recommendation is represented as being "the advantage to be gained from uniformity in the method of forming multiples and sub-multiples of the unit."

But although the metric system has made little progress in this country, and has met with scant official encouragement, the importance of its universal adoption is becoming every year more fully recognised in our colonies. The report which forms the subject of this article is a very clear indication of the strong current of public opinion in the Transvaal in favour

of the general adoption of the system. The commissioners, of whom Mr. R. T. A. Innes, the well-known Government meteorologist, was chairman, recommend that the kilogram, the metre, and the litre be adopted as the basis of the standards of weight and measure in the colony. An important resolution, which will go far towards making the public familiar with metric weights and measures, is that it shall be compulsory to use the system in land surveying and in the retail sale of drugs. The opinion is expressed that it will not be practicable to insist upon the exclusive use of the metric system in general trade in the colony until the system is made compulsory in the United Kingdom, unless the other South African colonies consider it feasible to combine for the purpose.

The commissioners have made a careful survey of the question of weights and measures legislation, and their recommendations are embodied in a final draft ordinance the provisions of which are in many respects a distinct advance on the enactments in force in this country. Thus the definition of "trade" explicitly includes contracts for land, and so renders surveyors' measures liable to official verification. In the United Kingdom, surveyors generally test their own measures as best they can. The definition of "measuring instrument" includes instruments for the measurement of area. A similar provision in this country would be most beneficial to the leather trade in preventing disputes, now of frequent occurrence, especially in the sale of hides. Short weight and measure, and the practice of weighing the wrappers with goods sold, are made distinctly penal. People defrauded by these practices in the United Kingdom have to seek their remedy in the county court, or in a prosecution for false pretences.

It appears from the minutes of evidence appended to the report that much difficulty is experienced in the Transvaal in getting assay weights standardised with accuracy, especially weights from 10 mg. downwards. Certificates obtained some years ago from official institutions in Austria, England, Germany, and the United States were found to give very different values for the same set of proportional assay weights. So far at least as England and the United States are concerned, it is probable that at the period in question the standardising institutions had had but little experience in the verification of metric assay weights. Within the last few years, however, both these departments have been materially strengthened. The recent report of the newly-constituted Bureau of Standards at Washington sufficiently attests the high calibre of the scientific members of the present staff, whilst a corresponding improvement has been effected in this country by the appointment of Major P. A. MacMahon, F.R.S., to take charge of the Standards Department of the Board of Trade.

At the forthcoming colonial conference the importance to our colonies of the adoption of the metric system of weights and measures throughout the Empire will be urgently impressed upon the Secretary of State, and it is hoped that the Home authorities will be induced to take a greater interest in this question than they have hitherto evinced. The introduction of the metric system into the United Kingdom is not indeed a task to be lightly undertaken. It would involve much hardship to small traders, and would derange the habits of the whole trading community. Centuries of instruction in the "advantages of uniform multiples of the unit" would not prepare the nation for so great a sacrifice. When so little has been done by the authorities to familiarise the public with the real significance of the question, it is not surprising that public opinion is on the whole unripe for

<sup>1</sup> "Report of the Commission appointed to consider and report upon a Draft Ordinance to consolidate and amend the Law relating to Weights and Measures." (Pretoria: Government Printing Office, 1906.)

a change of such magnitude. These considerations are well understood in the colonies. Thus on p. 64 of the report now under consideration we find the statement:—"The United Kingdom is conservative and unless this is forced upon them it will never be adopted."

The question of the adoption of the metric system has not been brought forward in our colonies merely from considerations of relative practical utility or of relative scientific perfection, but owing to difficulties experienced in commerce with foreign countries, and to the prospect of continual loss of trade. Until the United Kingdom, their very good customer, takes the lead, they cannot afford to make the change. If their loyalty in respect of weights and measures is thus in great measure enforced upon them, it is none the less pathetic. Every day it is more effectually shutting them out from the new markets which are of vital importance to their commercial prosperity. So long as the public at home are taught that the claims of the metric system are based chiefly on its decimal notation, so long will they remain unconvinced of the necessity for adopting it. On the other hand, if the true issues are placed before them, they are not likely to be inconsiderate in a matter which involves the interests of their most important colonies.

#### NOTES.

THE following is the text of the address presented by Sir Arch. Geikie for the Royal Society at the recent celebration of the quatercentenary of the University of Aberdeen:—"The Royal Society of London for Promoting Natural Knowledge sends cordial greetings to the University of Aberdeen on the auspicious occasion of the celebration of the four hundredth anniversary of its foundation. The Royal Society would more specially desire to record its sense of the importance of the services which the University has rendered to the progress of science. From its infancy the society has been privileged to count among its fellows distinguished professors and graduates of Aberdeen, and this close and valuable association still continues. It is a gratification to recall that the illustrious family of the Gregorys, which for some two centuries shed so much fame upon the University and upon Scotland, were from the beginning intimately linked with the Royal Society. James Gregory early reached such eminence in mathematical and astronomical research that in 1668, when he was only thirty years of age, he was elected a fellow, six years after the incorporation of the society. His invention of a reflecting telescope, of which he had first conceived the idea, prompted Newton to proceed in a similar direction in order to evade the difficulties of chromatic dispersion, and led to mutual regard and friendly cooperation. To his brother David Gregory, who had the distinction of being one of the earliest effective promoters of the Newtonian philosophy, the society is also indebted for important communications published in early volumes of the Philosophical Transactions. The obligations of physical science to Aberdeen did not end with the lives of the masters of the seventeenth century, for within living memory the University has numbered among its professors the world-renowned pathfinder James Clerk Maxwell. To the progress of the study of medicine the same remarkable family of Gregory continued during successive generations to make important contributions, while the fame of the medical school was in more recent years extended by Allen Thomson. In natural science the well-remembered names of John Fleming, William MacGillivray, and James

Nicol appear among those who have sustained the scientific reputation of Aberdeen. But it is not only with the scientific side of culture in the University that the Royal Society has had interesting links. It is a pleasure to remember that Thomas Reid, the father of Scottish philosophy, whose fame is one of the fairest pearls in the chaplet of the northern University, contributed to the Royal Society in 1748 an essay upon quantity. In remembrance of these varied associations of the past, and with sincere wishes for their continuance in the future, the Royal Society gladly adds its felicitations to those which will this year come from all civilised countries to the University of Aberdeen.

WE regret to learn of the death on Wednesday, October 10, at the age of fifty-five, of Mr. Herbert Rix, assistant secretary of the Royal Society from 1885 to 1896. Mr. Rix resigned his post ten years ago, finding that his strength would no longer sustain the greatly increased anxiety and burden of his office. He was already suffering from a weakness of the heart, which gradually developed during the following years. A year ago he was obliged to relinquish nearly all active work, and the shock of his wife's death last August, as the result of an accident, had a disastrous effect upon him. Mr. Rix entered the service of the Royal Society in 1879, as clerk under the late Mr. Walter White, then assistant secretary, whom he succeeded six years later, his service to the society thus extending over seventeen years. During this period a great extension of the activity of the society occurred, entailing a large increase in the responsibilities of the executive and in the amount of work thrown upon the office. Mr. Rix's bent was in the direction of the moral rather than of the exact sciences, but he gave the best energies of a well-trained mind to the arduous duties of his position, and the simple directness of his character, his high principles, and his kindly nature made him popular with all who came in contact with him. After retiring from the assistant secretaryship he retained for some years the position of clerk to the Government Grant Committee, and continued up to the time of his death to act as secretary to the Lawes Trust Committee. He devoted much of his latter years to the study of comparative religion, and was a frequent lecturer on ethical subjects. He was a graduate of London University.

THE board of directors of the great manufacturing firm of Kynoch (Ltd.) has decided to introduce the metric system of weights and measures into all their works. A small committee has been appointed to consider the details of the change and to provide the necessary instruments, and as soon as the committee reports the change will be made. All the weights and measures used by the firm, whether lineal, square, or cubic, will be metric. For money calculations the pound sterling will be adopted as the unit, and this will be subdivided decimally.

A REUTER telegram of October 11 from Basse-Terre, Guadeloupe, reports that a violent eruption of Mont Pelée has caused a shower of ashes to fall over the south-east of Guadeloupe.

A NEW ZEALAND international exhibition is to be held, under the auspices of the New Zealand Government, at Christchurch, Canterbury. The exhibition will be opened on November 1, and will be terminated in April, 1907. A special feature is to be made of the representation of Maori life, and Poi dances and hakas will be arranged from time to time.